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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,050	08/17/2005	Sven-Erik Behrens	P51375	8497
20462 7590 05/21/2007 SMITHKLINE BEECHAM CORPORATION CORPORATE INTELLECTUAL PROPERTY-US, UW2220 P. O. BOX 1539 KING OF PRUSSIA, PA 19406-0939			EXAMINER CHEN, STACY BROWN	
			ART UNIT 1648	PAPER NUMBER
			MAIL DATE 05/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,050

Applicant(s)

BEHRENS ET AL.

Examiner

Stacy B. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 18, 19, 41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-15, 18, 19, 41, 42 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's preliminary amendment filed March 11, 2005 is acknowledged and entered. Claims 1-15, 18, 19, 41 and 42 are pending and subject to the following restriction.

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Claims 1-3, 14, 15, 18 and 19 link(s) inventions **I-IV**. The restriction requirement between the linked inventions is subject to the nonallowance of the linking claim(s), claims 1-3, 14, 15, 18 and 19. Upon the indication of allowability of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise requiring all the limitations of the allowable linking claim(s) will be rejoined and fully examined for patentability in accordance with 37 CFR 1.104. Claims that require all the limitations of an allowable linking claim will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

Applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, the allowable linking claim, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Group I, claim(s) 4-8, the special technical feature is a method for modulating viral RNA replication and translation by contacting a viral RNA-binding protein with a compound that **modulates the formation of a viral:cellular ribonucleoprotein (RNP) complex.**

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Group II, claim(s) 9-11, the special technical feature is a method for modulating viral RNA replication and translation by contacting a viral RNA-binding protein (vRbp) with a compound that **modulates viral circularization**.

Group III, claim(s) 12, the special technical feature is a method for modulating viral RNA replication and translation by contacting a viral RNA-binding protein with a compound that **modulates an increase in translation frameshifting** that results in decreased viral replication.

Group IV, claim(s) 13, the special technical feature is a method for modulating viral RNA replication and translation by contacting a viral RNA-binding protein with a compound that **modulates the formation of vRbp:PKR** (double stranded RNA-dependent protein kinase) interaction.

Group V, claim(s) 41, the special technical feature is a method for modulating the function of a viral 3'UTR by contacting the 3'UTR with a compound that **modulates the structure of the 3'UTR**.

Group VI, claim(s) 42, the special technical feature is a method for screening to identify compounds that activate or inhibit the function of vRbp.

3. The inventions listed as Groups I-VI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The asserted special technical feature of Groups I-IV is a method of modulating viral RNA replication and translation in a eukaryotic cell of a positive-strand viral RNA, comprising contacting a vRbp with a compound that modulates an activity of the vRbp. Cui *et al.* (*Virology*, 1998, 246 :409-417) discloses that recombinant Dengue Virus Type 1 NS3 protein exhibits specific viral RNA binding and NTPase activity regulated by the NS5 protein (abstract). Using binding competitors (compounds that modulate activity of the viral binding protein NS3), Cui *et al.* demonstrate that Den-1 NS3 protein exhibits preferential binding to a 94-nt RNA transcript from the 3' non-coding region of the dengue virus (abstract). Cui *et al.* discloses that the NTPase activity of the NS3 protein is regulated by viral RNA polymerase, and that NS3 is a target for therapeutic intervention in flavivirus infection (page 415, end of first column bridging to second column). Although Cui *et al.* does not perform the competitive assays in eukaryotic cells, it would have been obvious to test for competitive binding *in vitro* in eukaryotic cells. Given the suggestion of Cui *et al.* to target the NS3 in flavivirus infection, one would have been motivated to confirm the NS3 viral binding protein activity in eukaryotic cells since Dengue infects eukaryotic cells. Therefore, the asserted special technical feature of Groups I-IV is fairly suggested by the prior art, and the claims lack unity of invention. The special technical feature of Group V is a method that involves the modulation of the structure of the 3'UTR; this feature is not shared by any other Group (see claim 3). The special technical feature of Group VI is a method for screening to identify compounds that activate or inhibit the function of vRbp; this feature is not shared by any other Group.

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4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should Applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Conclusion

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy B. Chen whose telephone number is 571-272-0896. The examiner can normally be reached on M-F (7:00-4:30). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Stacy B. Chen 5/15/07
STACY B. CHEN
PRIMARY EXAMINER